

L 26344-65

ACCENSION NR: AP4042109

which is both light and of small dimensions. It is characterized by operating stability in a wide range of power-supply voltage fluctuations and of ambient temperature changes. These units were tested in a wide range of ambient temperature and power-supply voltage changes. On the basis of the results obtained, it is concluded that in the range of ambient temperature changes from 0 to 40°C, and power supply voltage changes of from 0 to 30%, the frequency reducer ensures synchronous operation within 5% of the limit of frequency changes of the applied signal. Engineer W. Klemek developed the voltage stabilizing unit. Orig. art. has 13 diagrams.

ASSOCIATION: Instytut Podstawowych Problemów Techniki PAN (Institute for Fundamental Technical Problems, Polish AS)

SUBMITTED: 00

ENDL: 00

DIS. CODE: 00

NO. EXP. Sov.: 000

OTHER: 004

Card 3/3

L 26344-65
ACCESSION NR: AP4042109

inticks of the frequency master, which is the necessary condition for achieving good frequency stability. The quartz generator (a type-OC170 transistor) has a feedback branch consisting of two condensers (20 nF and 2 nF) and a quartz resonator. A series circuit connected in series with the resonator ensures frequency control. A two-stage amplifier for automatic amplitude stabilization has a negative feedback branch to stabilize the amplitude of the amplification. The purpose of the duplex thermostat in the frequency master is: 1) to reduce the power fed to the internal thermostat in a state of set heat; 2) to limit the range of ambient temperature changes of the internal thermostat; 3) to make possible the housing of certain assemblies in the internal thermostat which has an effect on the stability of the frequency master. The amplifier operating in the thermoregulator (thermostat) assembly develops an amplification power of around 85 dB, and the internal resistance of the amplifier is fifteen \pm 30 fl. The temperature in the external thermostat is fixed at a value of 47°C, and temperature fluctuation resulting from discontinuous control is \pm 0.05°C at an ambient temperature of $T = 20^\circ\text{C}$. In the internal thermostat, temperature in the steady state is 50°C. The frequency master power supply operates on 220 V AC. The frequency multiplier and frequency reducer were designed in such a way as to ensure the frequency master operating conditions. The use of transistorized assemblies has produced a device

Card 2/3

L 26344-65 EWT(1)/BWA(h) Feb
ACCESSION NR: AP4042109

P/0022/54/000/006/0161/0165

AUTHOR: Hahn, Stefan (Docent, Doctor, Engineer); Chachulski, Andrzej (Master engineer); Kowalewski, Wlodek (Master engineer)

15
8
B

TITLE: A transistorized frequency master *✓*

SOURCE: Przeglad telekomunikacyjny, no. 6, 1964, 161-165

TOPIC TAGS: transistorized frequency master, frequency reducer, frequency multiplier, quartz generator, duplex thermostat, feedback branch, condenser, negative feedback branch, automatic amplitude stabilization, internal thermostat, external thermostat, amplification power, operating stability

ABSTRACT: The article describes the design, operation, and characteristics of a device consisting of a transistorized frequency master and of a frequency reducing and frequency multiplying unit built at the Zaklad Badania Drgan Instytutu Podstawi- wych Problemow Techniki PAN (Laboratory for the Investigation of Vibrations of the Institute of Fundamental Engineering Problems of the Polish Academy of Sciences). The frequency master uses a 200-kc quartz generator with a duplex thermostat. The purpose of the generator is to ensure small and constant amplitude of the oscilla-

Card 1/3

HAHN, Stefan (Warsaw)

Nonlinear theory of a generator with a long line excited by
a negative resistance. Proc vibr probl 2 no.3:307-323
'61.

1. Department of Vibration, Institute of Basic Technical
Problems, Polish Academy of Sciences, Warsaw.

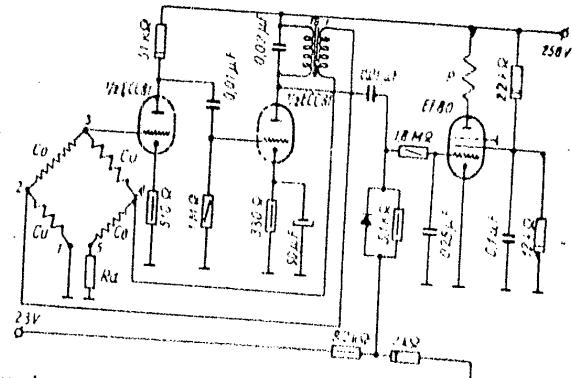
85102

P/022/60/000/008/001/004
A222/A026

Frequency Gauges of the Warsaw Polytechnic

Fig. 4

Legend: Wiring diagram of the outside temperature control circuit.



Rys. 4. Schemat elektryczny termoregulatora zewnętrznego

There are 9 figures and 3 Polish references.

ASSOCIATION: Katedra Urządzeń Radiotechnicznych P.W. (Department of Radio Engineering Equipment, Warsaw Polytechnic)

Card 5/5

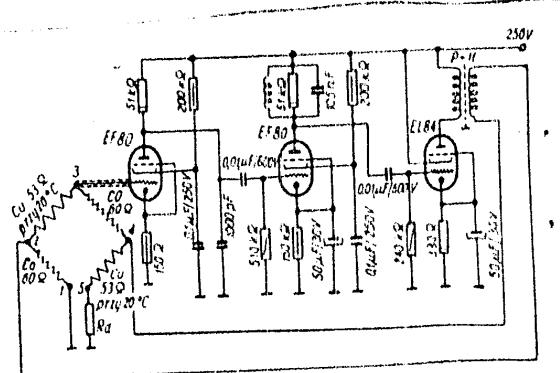
85102

P/022/60/000/008/001/004
A222/A026

Frequency Gauges of the Warsaw Polytechnic

Fig. 3

Legend: Wiring diagram of in-side temperature control circuit.



Rys. 3. Schemat elektryczny termoregulatora wewnętrznego

Card 4/5

85102

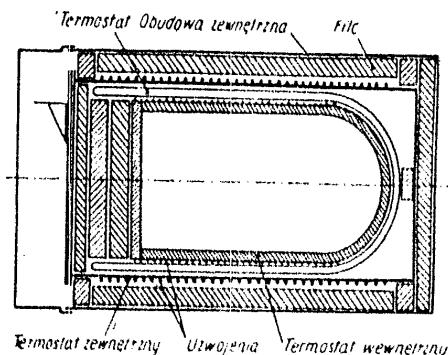
Frequency Gauges of the Warsaw Polytechnic

P/022/60/000/008/001/004
A222/A026

with an accuracy better than $\pm 5 \cdot 10^{-9}$. The author acknowledges the assistance by Professor Doctor Stanisław Ryzko, head of the Department of Radio Engineering Equipment, Warsaw Polytechnic.

Fig. 2

Legend: The thermostat consists of an inside Al cylinder (diameter 85 mm, wall thickness 6 mm), bearing 2 coils of copper wire and 2 coils of constantan wire, a thermos bottle holding the Al cylinder, and an external thermostat cylinder with resistor coils.



Rys. 2. Konstrukcja termostatu

Card 3/5

85102

P/022/60/000/008/001/004
A222/A026

Frequency Gauges of the Warsaw Polytechnic

The wiring diagram of the quartz generator is shown in Figure 5. The generator uses the grid-toplate circuit with the plate as the base. Two Y-cut quartz oscillators were produced at the Instytut Tele- i Radiotechniczny (Institute of Telecommunications and Radio Engineering). The data of the one of the crystals is: inductance 1,200 H; number of merit 250,000; series resonance frequency 99,998.2 c.p.s.; temperature of the zero thermal coefficient 39°C. The gauges operate on 220 V a-c, each of the gauges on a different phase of the three-phase power line; no emergency power supply is provided. A beat-frequency counter is provided to compare the frequencies of all three gauges. Another beat-frequency circuit serves for frequency comparison with the British transmitter in Rugby. All three gauges, each in a separate unit, are incorporated in a cabinet (Fig. 8). Preliminary operational tests showed a frequency shift in the gauges due to the aging effect, though the shift gradually decreases. The frequency shift diagram for the X+5° cut crystal gauge No. 1 (number of merit 500,000) is shown in Figure 9. As of January 1960 (beginning of operation), the shift was $1.85 \cdot 10^{-9}$ per 24 hours, and decreased to $0.8 \cdot 10^{-9}$ as of May 1960. The frequency tolerance of crystal gauge No. 1 is maintained at $\pm 5 \cdot 10^{-8}$ and is thought to improve to $\pm 2 \cdot 10^{-8}$ as the aging effect decreases. Upon request, however, customers may receive frequency signals

85102

P/022/60/000/008/001/004
A222/A026

9,6000 (1012,1024,1099)

AUTHOR: Hahn, Stefan, Doctor of Engineering

TITLE: Frequency Gauges of the Warsaw Polytechnic

PERIODICAL: Przeglad Telekomunikacyjny, 1960, No. 8, pp. 229 - 232

TEXT: A gauge frequency stand was designed and built at the Katedra Urządzeń Radiotechnicznych P.W. (Department of Radio Engineering Equipment of the Warsaw Polytechnic). The stand consists of 1) three 100 kc quartz frequency gauges, 2) a system for measuring and recording beat frequencies of the gauges, and 3) a stand for comparing frequencies of the gauge with that of the British long-wave transmitter GBR in Rugby. The three quartz gauges are of identical design and were built at the Warsaw Polytechnic according to a pattern worked out by the author at Zaklad Badania Organ Instytutu Podstawowych Problemów Techniki (Department of Vibration Research, Institute of Basic Engineering Problems). Each of the 100 kc gauges and pertinent capacitors are placed in a dual thermostat (inside and outside Thermostates). The thermostat is shown in Figure 2. The resistor coils of inside and outside thermostates are wired in bridge circuits and connected to electronic temperature control circuits whose wiring diagrams are shown in Figure 3 and 4.

Card 1/5

POLAND/Radio Physics - General

I-1

Abs Jour : Ref Zhur - Fizika, No 6, 1956, No 13728

the stability of the periodic oscillations of the generators with one degree of freedom. It is shown that in generators using the dynatron effect, stable oscillations are possible only when the capacitance and inductance are connected in parallel. A formula is derived for relating the admittance of a negative impedance with the amplitude of the steady-state oscillations. Bibliography, 13 titles.

Card : 2/2

Hahn, S.

POLAND/Radio Physics - General

I-1

Abs Jour : Ref Zhur - Fizika, No 6, 1958, No 13728

Author : Hahn S.

Inst : Not Given

Title : Amplitude, Frequency, and Harmonics of the Van-der-Pol Limit Cycle. Method of Admittance Balance

Orig Pub : Arch. elektrotechn., 1957, 6, No 3, 371-394

Abstract : The admittance of a negative nonlinear impedance is defined as the negative of the ratio of the first harmonic of the current to the first harmonic of the voltage. With the aid of the admittance-balance method for a generator and a parallel-connected tank circuit, the author calculates the amplitudes and the phases of the first seven harmonics of voltage in the tank circuit of an oscillator, described by the equation

$$G(t) = \frac{1}{2} + C_1 \cos(\omega t + \phi)$$

for the values of β from 0 to 2. Using the introduced concept of admittance, the author has formulated the condition for

Card : 1/2

HANM, J.; SCHEIBELT, A.

HANM, J.; SCHEIBELT, A. Frequency modulator for radio transmitters, p. 11.

Vol. 2, No. 10, 1956.

FRONT

TECHNOLOGY

Warszawa, Poland

See: R&T European Association, Vol. 6, No. 2, Feb. 1957

APPROVED FOR RELEASE: 06/23/11 CIA-RDP86-00513R000617800037-6

1977, 34; Chihara, J. Laboratory study of frequency variation. *J. Acoust.*

VOL. 36, NO. 7, July 1967
J. CHAT. THERAP. PLACENTA
TERAPIE
Warszawa, Poland

So: East European Accession. Vol. 5, no. 5, May 1996

HAHN, S.

621.373.431.4

✓ 2308. CURRENT-CONTROLLED NEGATIVE RESISTANCE
IN THE TRANSITRON CIRCUIT. S.Hahn.

Prace P.I.T. No. 11, 1-6 (1955). In Polish.

A pentode is considered which operates as a transitron with a cathode load, R_K , and it is shown that the system displays an arc-type (S) negative resistance between the anode-cathode terminals. Experimental data confirm this conclusion and a plot of the anode current v. voltage for the pentode EP22P gives a range of negative resistances of 15-25 k Ω (depending on R_K). The cathode-coupled transitron can therefore be employed as an oscillator, if a parallel-resonant circuit is connected in the cathode or a series-resonant circuit is inserted between the anode-cathode terminals. The system is particularly suitable for exciting series-resonance oscillations in a quartz crystal; for this purpose the crystal is connected between the anode and the cathode and a parallel-resonant circuit is employed in the cathode. The system has a satisfactory amplitude and frequency stability. By employing two 6SJ7 pentodes in a transitron push-pull circuit, it was possible to generate oscillations of 180 Mc/s. R.S.Sidorowicz

8/1/80

Hahn S.

8696

621.398.615.017.8 : 029.5

RT
MN

Mahn S., Sosnowski A. Improving the Efficiency of H. F. Oscillators.
"Polepszenie sprawności generatorów w.cz.". (Praca Przem. Inst. Telekom. No. 13-14), Warszawa, 1954, PWT, 9 pp, 28 figs.

The authors discuss the possibility of improving the anode efficiency of class C operated H. F. oscillators by distorting the anode voltage by the 3rd and 8th harmonics of the fundamental frequency. The way to obtain an almost rectangular pulse of the anode current in an oscillator with self excitation is explained; this pulse contains a considerable quantity of the harmonics mentioned, introduced with proper phases. Improved oscillators were tested, giving approximately 13% greater efficiency. The anode efficiency of an oscillator with external excitation amounted, when class B operated, to some 81%. The output power of

an oscillator with improved efficiency was found to be limited by grid dissipation rather than by anode dissipation.

BT
SCH

HAHN S.

POL.

3950

021.392.4, 021.399.015.1

Hahn S., "S"-Shaped Negative Resistance in Transistor Circuits

"Oporność ujemna typu „S” w układzie tranzystorowym". (Prace
Przem. Inst. Telekom. No. 11), Warszawa, 1954, PWT, 5 pp., 16 figs.

The author outlines the principle of operation of transitron oscillatory and amplifying circuits. He draws attention to the possibility of obtaining positive feedback by inserting a cathode resistor in a transitron circuit. In this case, there may appear a current controlled negative resistance between anode and cathode terminals of the valve (S-shaped negative resistance). A description of an experimental circuit of this kind is also given along with measured static characteristics of the negative resistance mentioned above. Its value reaches 25,000 ohms. A number of transitron oscillator circuits with cathode coupling are described. Of these, a crystal stabilized oscillator with quartz crystal, connected between anode and cathode, has remarkable features. The crystal is excited to oscillations in series resonance. In the event of suitable tuning of the cathode circuit, the frequency of the oscillator is largely independent of changes in supply voltages. The author also deals with a one-valve relaxation oscillator. By means of coupling in cathode circuit it is possible to develop a push-pull transitron oscillator. A circuit of this kind, with two 6SJ7 valves, was operated at a frequency of 150 Mc/s.

PZ 8/4

HAHN, STEFAN

Zasady radiokomunikacji. (Wyd. 1.) Warszawa, Wydawn. Komunikacyjne, 1953. 264 p.
(Principles of radio communication. maps, diagrs.)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 6, June,
1954, Uncl.

PROCHAZKA, P.; HAHN, P.; KOLDOVSKY, O.; NOHYNEK, M.; ROKOS, J.

The activity of α -amylase in homogenates of the pancreas of rats during early postnatal development. Physiol. Bohemoslov. 13 no. 3:288-291 '64

1. Institute of Microbiology and Institute of Physiology,
Czechoslovak Academy of Sciences, Prague.

CZECHOSLOVAKIA

SABATA, V., DRAHOVA, Z., HAHN, P; Institute of Care for Mother and Child, Physiological Institute, Czechoslovak Academy of Sciences (Ustav pro Peči o Matku a Dítě, Fysiologicky Ustav CSAV), Prague.

"Values of Acetoacetic Acid and Total Ketone Substances in Mother and Newborn Child."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66, p 92-93

Abstract: In the blood of mothers 0.10 micromoles/ml of acetoacetic acid and 0.47 micromoles/ml of total ketone substances was found; the blood of newborn children contained about $\frac{1}{2}$ of these amounts. The two values are in proportion to each other. fetus does not accumulate or produce these substances. It seems that these substances do not influence metabolism of the fetus. 1 Figure, 1 Western reference. Submitted at "16 Days of Physiology" at Kosice, 29 Sep 65.

DRAHOTA, Z.; HAHN, P.; MOUREK, J.; TROJANOVA, M.

The effect of acetoacetate on oxygen consumption of brain slices from infant and adult rats. Physiol. Bohemoslov. 14 no.2:134-136 '65.

1. Institute of Physiology, Czechoslovak Academy of Sciences and Institute of Physiology, Faculty of General Medicine, Charles University, Prague.

NOVAK, M.; HAHN, P.; KOLODOVSKY, O.; MELICHAR, V.

Triglyceride and free fatty acid content of serum, lungs, liver
and adipose tissue during postnatal development of the rat. The
effects of starvation and olive oil administration. Physiol.
Bohemoslov. 14 no.1:38-45 '65

1. Institute for the Care of Mother and Child and Institute
of Physiology, Czechoslovak Academy of Sciences, Prague.

NOVAKOVA, V.; FALTIN, J.; KOLDENSKY, O.; DILLO, J., TAKIĆ, I.

On possibilities of compensating changes in higher nervous activity due to premature weaning of rats. Sov. med. revs., (Izdat.) 7 no. 2 (35-137) 1965

1. Institute of Physiology, Czechoslovak Academy of Sciences,
Prague 2. V. Nováková's address: Prof. Dr. T. Chmelík, Prague 2.

FALTB, J., LIVAROV, V.; KUDOVSKY, O.; HANL, J.

The importance of the time of weaning for litter behaviourality
to adult rats. Actu nerv. sup. (Prague) 7 no. 221 v. 1965 - 165

1. Institute of Physiology, Czechoslovak Academy of Sciences,
Prague. 2. J. Faltn's address: Praha 6, Flemingovo 2.

NOVAKOVA, V.; KOLDOVSKY, O.; FALTIN, J.; HAHN, P.; FLANDERA, V.

The effect of premature weaning and high fat diet on retention
of a memory trace in male rats. Physiol. Bohemoslov. 12 no.6:
533-540 '63.

I. Institute of Physiology, Czechoslovak Academy of Sciences,
Prague.

(DIETARY FATS) (MEMORY)
(REFLEX, CONDITIONED)
(BEHAVIOR, ANIMAL) (ANIMALS, NEWBORN)
(NUTRITION)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513B00061Z800037-6

HAHN, P.; KOLDOVSKY, O.

Carbohydrate utilisation in suckling rats. Physiol. Bohemoslov. 12 no. 5:453-457 '63.

1. Institute of Physiology, Czechoslovak Academy of Sciences,
Prague.

NOVAKOVA, V.; KOLDOVSKY, O.; FALTIN, J.; HAHN, P.; FLANDERA, V.

Conditioned reflex activity in male rats weaned normally or
prematurely. Physiol. Bohemoslov. 12 no.4:325-331 '63.

1. Institute of Physiology, Czechoslovak Academy of Sciences,
Prague.

(REFLEX, CONDITIONED) (ANIMALS, NEWBORN)
(DIET) (DIETARY FATS) (BEHAVIOR, ANIMAL)

CZECHOSLOVAKIA

HAHN, P.; Institute of Physiology of Czechoslovak Academy of Sciences
(Fysiologicky ustav CSAV,) Prague.

"Education of Physiologists."

Prague, Ceskoslovenska Fysiologie, Vol 12, No 4, July 1963; pp 297-298.

Abstract: Several relatively vague criticisms and suggestions are advanced regarding the current methods of teaching physiology in Czechoslovak universities, aiming mainly at increasing the prestige of the PhD physiol. as opposed to diluted specialization in practice as is currently done.

ROKOS, J.; HAHN, P.; KOLDOVSKY, O.; PROCHAZKA, P.

The postnatal development of lipolytic activity in the pancreas and small intestine of the rat. Physiol. bohemoslov. 12 no. 3:213-219 '63.

1. Institute of Microbiology and Institute of Physiology,
Czechoslovak Academy of Sciences, Prague.
(PANCREAS) (INTESTINE, SMALL)
(LIPID METABOLISM) (CORTISONE)
(ANIMALS, NEWBORN) (MILK)

KOLDOVSKY, O.; DANYSZ, J.; PALTOVA, E.; HAHN, P.

The postnatal proximo-distal development of glucose absorption, intestinal alkaline phosphatase activity and propulsive motility of the intestine in rats. Physiol. bohemoslov. 12 no.3:208-212 '63.

1. Institute of Physiology, Czechoslovak Academy of Sciences,
Prague.

(INTESTINE, SMALL) (ALKALINE PHOSPHATASE)
(GLUCOSE) (ABSORPTION) (ANIMALS, NEWBORN)

HAHN, P.

Manufacture and utilization of glucose and glycogen. Evolutionary aspects.
Cesk. fysiol. 12 no.1:26-33 '63.

1. Fysiologicky ustav CSAV, Praha.

(PHOSPHATASES) (GLUCOSE) (GLYCOGEN) (AMINO ACIDS)
(FATS) (KREBS CYCLE) (EVOLUTION)

KUBAT, K.; FLANDERA, V.; HAHN, P.; KOLDOVSKY, O.

Late sequelae of early adaptation; effect of premature weaning on spermatogenesis in rats. Sborn. lek. 64 no.12:258-262 D '62.

I. II patologicko-anatomicky fakulty vseobecneho lekarstvi University
Karlovych v Praze, VUPL-Konarovice Fyziologicky ustav CSAV v Praze.
(ADAPTATION PHYSIOLOGICAL) (FERTILITY) (SPERMATOZOA)
(REFLEX CONDITIONED) (ANIMALS NEWBORN)

VACEK, Z.; HAHN, P.; KOLDOVSKY, O.

Histological study of fat distribution in the small intestine,
liver and lungs following oral fat administration to rats of
different postnatal ages. Os morfologie 10 no.1:35-45 '62.

1. Institute of Embryology, Faculty of Medicine, Charles
University and Institute of Physiology, Czechoslovak Academy
of Sciences, Prague.

CAPOVA, H.; DUBANSKA, H.; HAHN, P.; HUTAK, D.; JILEK, J.; KOLDOVSKY, O.;
NECAS, O.; NOVAK, P.; SEJNOHA, L.; SPACEK, J.

The mount of total body fat determined by skin fold thickness in
males from 16 to 35 years. Cesk. gastroent. vyz. 15 no.7: 540-555
N '61.

1. Fyziologicky ustav CSAV - Praha, Ustav leteckého zdravotnictví -
Praha, Vojensky ustav hygieny, epidemiologie a mikrobiologie - Praha.
(ADIBOSE TISSUES)

NOVAK, M.; MELICHAR, V.; HANN, P.; KOLDOVSKY, O.

Levels of lipids in the blood of newborn infants and the effect of glucose administration. Physiol Bohemoslov 10 no.6:488-492 '61.

1. Institute for the Care of Mother and Child and Institute of Physiology of the Czechoslovak Academy of Sciences, Prague.
(LIPIDS blood) (INFANT NEWBORN blood)
(GLUCOSE pharmacol)

HAIN, P.; KOLDOVSKY, O.

The effect of individual nutrients on growth and carbohydrate forma-
tion in rats of different ages. Physiol Bohemoslov 10 no.6:481-485
'61.

1. Institute of Physiology, Czechoslovak Academy of Sciences, Prague.
(AGING) (DIET exper) (CARBOHYDRATES metab)

HAHN, P.; KOLDOWSKY, O.; PIXARTOVA, H.

Effect of chlorpromazine on young rats of various ages. Cesk.
pediat. 15 no.10:873-879 01'60.

1. Fyziologicky ustav CSAV, Ustav pro peci o matku a dite, Praha.
(CHLORPROMAZINE pharmacol)

VIKTORA, J.; FODOR, J.; GRAFNETTER, D.; HAHN, P.; KOLDOVSKY, O.; LOJDA, Z.

Studies of certain biochemical indices of fat metabolism during
the ontogenesis of rats. Cesk. fysiol. 9 no.1:63-64 Ja. 60.

1. Ustav pro choroby obehu krevniho, Fysiologicky ustav CSAV a
Embryologicky ustav lek. fak. KU. Praha.
(FATS metab.)
(GROWTH)

SLABOCHOVA, Z.; FABRY, P.; HAHN, P.; KOLDOVSKY, O.; MASEK, J.; NOVAK, M.; PLACER, Z.
Effects of 3 diets on certain indices of fat metabolism in rats.
Cesk. fysiol. 9 no.1:50-51 Ja 60.

1. Ustav pro vyzkum vyzivy lidu. Fysiologicky ustav CSAV, Praha.
(DIETS exper.)
(FATS metab.)

HAHN, P.; KOLDOVSKY, O.

Effect of the age of weaning on the growth of young rats fed the same food. Cesk. fysiolog. 9 no.1:14-15 Ja 60.

1. Fysiologicky ustav CSAV, Praha.
(GROWTH)
(BREAST FEEDING)

KOLDOVSKY, O.; PARIZKOVA, J.; HAHN, P.

Growth of young rats given free choice of food. Cesk. fysiol. 8
no. 5:415-416 S '59

1. Fysiologicky ustav CSAV a Fysiol. odd. VUT, Praha.
(GROWTH)

HAHN, P.; KOLDOVSKY, O.; ZAK, R.

Loss of liver proteins in rats of various ages after the exposure
to cold. Cesk. fysiol. 8 no.5:405-406 S '59

1. Fysiologicky ustav CSAV, Praha.
(COLD eff.)
(LIVER metab.)
(PROTEINS metab.)
(AGING eff.)

ANISIMOVA, E.; VACEK, Z.; KOLDOVSKY, O.; HAHN, P.

Histochemical studies on fat metabolism in the mucosa of the small intestine in young rats. Cesk. fysiol. 8 no. 5:392 S '59

1. Embryologicky ustav KU a Physiologicky ustav CsAV, Praha.
(LIPIDS, chem.)
(INTESTINE SMALL chem.)

KOLDOVSKY, O.; HAHN, P.; TINTERA, J.; JIRANEK, J.

Resorption of olive oil from the gastrointestinal tract in young rats of various ages. Cesk. fysiolog. 8 no. 3:211 Apr 59.

1. Fysiologicky ustav CSAV a Fysiologicke oddeleni Ustavu pru vyzkum
vyzivy lidu, Praha. Predneseno na III. fysiologickych dnech v Brne dne
15. 1. 1959.

(GASTROINTESTINAL SYSTEM, physiol.

resorption of olive oil in young rats, age factor (Cz))

(AGING, eff.
on gastrointestinal resorption of olive oil in young rats (Cz))

(OILS,
gastrointestinal resorption of olive oil in young rats, age
factor (Cz))

HAHN, P.; KOLDOVSKJ, O.

Age factor in reactions to cold of young rats. Cesk. fysiol. 8 no. 3:
192 Apr 59.

1. Fysiologicky ustav CSAV, Praha. Predneseno na III. fysiologickych
dnech v Brne dne 15. 1. 1959.
(COLD, effects,
on young rats, age factor (Cz))
(AGING, effects,
on reaction to cold in rats (Cz))

Hahn P
EXCERPTA MEDICA Sec 3 Vol 12/9 Endocrinology Sep 58

1796. SIGNIFICANCE OF THE ADRENAL GLANDS DURING THE POST-NATAL DEVELOPMENT OF THERMOREGULATION IN THE RAT - Hahn P.
and Koldovský O. Inst. of Physiol., Czechosl. Acad. of Scis, Prague -
NATURE (Lond.) 1958, 181/4612 (847)

The results of experiments show that the adrenal glands participate in the maintenance of body temperature in 5-day-old rats. On the other hand, they evidently are not indispensable for the increase in O_2 consumption which occurs when the external temperature is changed from 35° to 30° C. The negative results obtained by previous workers are probably due to the low environmental temperature used.

(III, 2*)

EXCERPTA MEDICA Sec 2 Vol 12/9 Physiology Sept 59

4160. THE EFFECT OF RESTRAINT ON RATS WITH SPECIAL REFERENCE TO THEIR POST-NATAL DEVELOPMENT - Hahn P. and Koidovsky O. Inst. of Physiol., Czechoslovak Acad. of Scis, Prague - PHYSIOL. BOHEM. 1958, 7/6 (515-520) Graphs 4

Rats were restrained by placing a thermocouple in the rectum and by fixing it to the tail and hind legs with adhesive tape. It is shown that such restraint at 29.5°C. external temperature results in a more rapid fall of body temperature on exposure of the restrained animals to 10°C. external temperature, in comparison to animals not restrained previously. Exposure of unrestrained animals to 29.5°C. for 3 hr. prolongs the subsequent fall in rectal temperature on exposure of these animals, now restrained, to 10°C. Restraint at 29.5°C. for 3 hr. results in a drop of liver and muscle glycogen contents in 40-day-old animals and of liver glycogen content only in 14-day-old animals.

Hahn - Prague

KOLDOVSKY, O.; HAHN, P.; JIRANEK, J.

Intestinal glucose resorption in rats in ontogenesis. Cesk. fysiol. 7 no.5:
491-492 Sept 58.

1. Fysiol. ustav CSAV a fysiol. odd. Ustavy pro vyzkum vyzivy lidu, Praha.
(INTESTINES, physiol.
glucose resorption in rats, age factor (Cz))
(GLUCOSE, metab.
intestinal resorption in rats, age factor (Cz))
(AGING, effects,
on intestinal glucose resorption in rats (Cz))

HAHN, P.; KOLDOVSKY, O.

Effect of cooling in the presence of two environmental temperatures on certain aspects of energy balance in young rats. Cesk. Fysiolog. 7 no.5: 463 Sept 58.

1. Fysiologicky ustav CSAV, Praha.
(COLD, effects,
on metab. in young rats (Cz))
(METABOLISM, TISSUE,
eff. of cold in young rats (Cz))

HAHN, P.; KOLODOVSKY, O.

Growth and food and water intake by adapted in early stages of development
to various environmental temperatures. Cesk. fysiol. 7 no.5:462-463 Sept 58.

1. Fysiologicky ustav Csav, Praha.

(TEMPERATURE,
adaptation, eff. on growth & food & water intake in rats (Cz))

(ADAPTATION,
eff. of early adaptation to various temperatures on growth &
food intake in rats (Cz))

(GROWTH,
eff. of early adaptation to various temperatures in rats (Cz))

(FOOD,
intake in rats adapted to various temperatures in early stages
of develop. (Cz))

KRAUS, M.; HAHN, P.

Effect of hypoxia on heart rate in young rats in ontogenesis in high environmental temperature. Cesk. fysiol. 7 no.3:211-212 May 58.

1. Fysiologicky ustav CSAV, Praha.

(ANOXIA, effects,

on heart rate in young rats exposed to heat (Cz))

(HEAT, physiol.

rate, eff. of anoxia in young rats exposed to heat (Cz))

(HEAT, effects,

on heart rate in young rats exposed to anoxia (Cz))

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000617800037-6

1980. Effect of environmental temperatures on the development of
Drosophila melanogaster. Institute of Hygiene and Public Health, Academy of
Sciences of the Czechoslovakia, Prague, Czechoslovakia. B. Park

EXCERPTA MEDICA Sec. Vol.10/12 Phy.Biochem. Dec. 57
Hahn P.

5173. HAHN P. Fisiol. Úst. ČSAV, Praha. "Vývoj thermoregulace. IV. Metabolismus uhlovodan v thermoregulaci krysich mládat. The development of thermoregulation. IV. Carbohydrate metabolism and thermoregulation in infant rats" ČSL. FYSIOL. 1956, 5/4 (444-448)
Changes in liver and muscle glycogen were studied in rats aged 14, 18, 21, 30 and 40 days of age after cold exposure (10° C.). Liver and muscle glycogen did not change in rats younger than 18 days. Both values decreased on cold exposure in older rats. Deprivation of food for 24 hr. caused a fall in liver glycogen in all age groups but muscle glycogen fell only after the 14th day postnatally. Reaction to cold exposure was not affected by deprivation of food for 24 or 72 hr.

Hahn - Prague

2494 :ONT.

the development of thermoregulation in rats ČSL. FYSIOL.
1956, 5/3 (302-307) and 5/4 (440-443) Graphs 4 Tables 2

II. Thyroidectomy carried out on the 4th day after birth has the following results in relation to thermoregulation: the effect on thermoregulation in the cold is not evident up to the 14th day after birth. On the 18th day and at all later ages the rate of fall of rectal temperature on exposure to 10° C. is significantly greater than in normal rats. Oxygen consumption at any given rectal temperature during cold exposure is lower in thyroidectomized rats than in normal ones from the 18th postnatal day onwards.

III. Thermoregulatory reactions to cold exposure (10° C.) were studied in rats aged 14, 18 and 40 days, after clipping. The rate of body temperature decrease in the cold was not affected by clipping before the 18th day. After that, clipping resulted in a much steeper drop of body temperature. At 29.5° C. environmental temperature, rats aged 18 days consumed more oxygen after clipping than rats not clipped. This difference had disappeared by the 40th day after birth.

Hahn - Prague (II, 3)

EXCERPTA MEDICA Sec.2 Vol.10/6 Phy.Biochem. June 57

2494. HAHN P. Fysiol. Úst. ČSAV, Praha. "Vývoj themoregulace. II. O účasti
střílné žlázy při vývoji thermoregulace u krys. III. Význam ochlupení pro
vývoj thermoregulace u krys. Development of thermoregulation.
II. Participation of the thyroid gland in the development
of thermoregulation in rats. III. Significance of fur in

HAHN, P.

Development of thermoregulation. II. Role of the thyroid gland in the development of thermoregulation in rats. Cesk. fysiol. 5 no.3:302-307 1956.

1. Fysiologicky ustav CsAV, Praha.
(THYROID GLAND, effect of excision,
on thermoregulation in rats (Cz))
(BODY TEMPERATURE,
thermoregulation, eff. of thyroidectomy in rats (Cz))

EXCERPTA MEDICA Sec.2 Vol.10/8 Phy.Biochem. Aug 57

3360. HAHN P., KŘEČEK J. and KŘEČKOVÁ J. Fysiol. Úst. Čs. Akad. Věd, Praha. Vývoj thermoregulační. I. K otázce vývoje thermoregulačních mechanismů kryšiho mláďete. Development of thermoregulation. I. Development of thermoregulatory mechanisms in young rats ČSL. FYSIOL. 1956, 5/3 (295-301) Graphs 4 Tables 1

Oxygen consumption and rectal temperature were studied in rats from birth up to the 40th day postnatally at 29.5°C. and 10°C. environmental temperatures. The drop in rectal temperature was slower in 10-day-old rats than in younger animals. On second exposure to cold this difference disappeared. Oxygen consumption at any given rectal temperature (in ml./body weight unit) was higher in younger than in older animals. In animals older than 14 days the curve of the decrease in rectal temperature showed 2 phases: a phase of rapid decrease and a phase of slow decrease which set in at a rectal temperature of 30-25°C. Hahn - Prague

HAHN, P.; KRECEK, J.; KRECKOVA, J., with the technical collaboration
of J. Chylkova.

The development of thermoregulation. I. The development of
thermoregulatory mechanisms in young rats. Physiol. bohem.
5 no.3:283-290 1956.

1. Institute of Physiology, Academy of Science, Prague.
(BODY TEMPERATURE,
thermoregulation, develop. in young rats)

HANN, F.

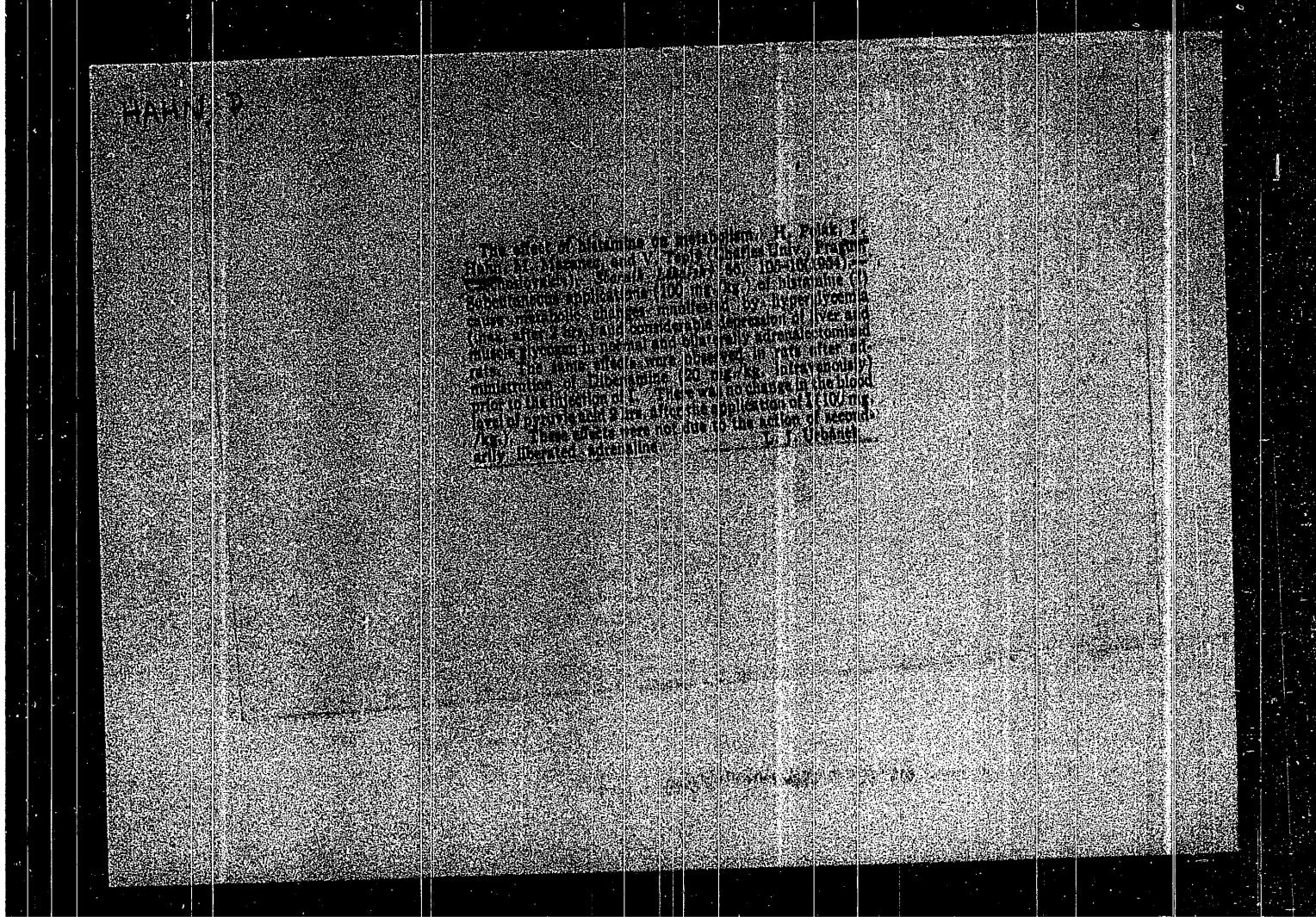
SCIENCE

Periodicals: CESKOSLOVENSKA FYSIOLOGIE Vol. 4, no. 4, 1955

HANN, F. 1st Scientific Conference of the Institute for Mother and Child
Care in Prague-Podoli. p. 513.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5,
May 1959, Unclass.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000617800037-6



HAHN, P.

Works of Babak on respiration. Chekh. fiziol. 3 no.2:113-121 1954.

1. Fiziologicheskiy institut Chekhslovatskoy Akademii nauk, Praga.
(BIOGRAPHIES,
Babak, E., bibliog.)
(RESPIRATION,
research, contribution of E.Babak)

HAHN, P.

"Stimulus to a New Understanding of Animal Physiology; a Review of Kh. S. Koshtoiant's Book Elements of Comparative Physiology." p. ??,
(CESKOSLOVENSKA FYSIOLOGIE, Vol. 3, No. 1, Jan. 1954, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEL), LC, Vol. 4
No. 5, May 1955, Uncl.

HAHN, P.

Modifications of oxygen requirements in rats during their postnatal development and relation of these modification to the environmental temperature. Chekh fiz 2 no.4:373-380 '53. (EEAL 3:7)

1. Biologicheskiy institut Chechoslovatskoy Akademii nauk, fiziologicheskoye otdeleniye, Praga.

(OXYGEN, metabolism,

*eff. of temperature in young rats)

(TEMPERATURE, effects,

*on oxygen metab. in young rats)

HAHN; P.

Effect of adenosine triphosphoric acid and cations upon the
resistance altitude anoxia. Chekh.fiziol.2 no.2:178-182 '53.
(MLRA 7:2)

1. Biologicheskiy institut Chekhslovatskoy Akademii nauk,
fiziologicheskoye otdeleniye, Praha.
(Anoxemia) (Adenylpyrophosphoric acid--Physiological effect)

HAHN, P.; KOLODOVSKY, O.; KRECEK, J.; KRECKOVA, J.

Development of aerobic metabolism in the brain of young rats.
Chekh.fiziol.2 no.2:171-177 '53. (MLRA 7:2)

1. Biologicheskiy institut Chechoslovatskoy Akademii nauk,
fiziologicheskoye otdeleniye, Praha. (Brain)

HAHN, P.; POLAK, H.

Effect of histamine on the resistance to high altitude anoxia [with
summary in German] Chekh. fiziol. 1 no.1.66-74, 1952. (MLRA 6:12)

1. Tsentral'nyy institut biologii, Fisiologicheskoye otdeleniye, Praha.
(Anoxemia) (Histamine)

HAHN, P.; POLAK, H.

Effect of histamine on resistance to high altitude anoxia. Cesk. fysiol.
1 no.1:43-50 1952. (CIML 23:4)

1. Of the Physiological Department of the Central Institute of Biology.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000617800037-6

CA HAHN, R.

117

Antihistamines and thyroxine metamorphosis in tadpoles.
P. Hahn and O. Poupa (Charles Univ., Prague). *Nature*
167, 83(1951) — The HCl salt of benzhydryl 2-(1-piperidyl)-
ethyl ether (spofa 101) inhibits the effect of thyroxine and
slows down the spontaneous metamorphosis of tadpoles.

Daniel Frishman

HAHN, R.

V Goitrogenic substances in food. P. Hahn (Fysiol. distav.
Prague), Časopis Lékařů Českých 59, 664-6 (1950).—The
goitrogenic effect of cabbage, carrots, pears, sugar beet,
and onions was tested on rats fed on a mixed diet, either
with added meat or without it. The amt. of juice from
any of these sources, equiv. to approx. 1.7 g. of fresh fruit
or vegetables, was administered for 40 days and had no
goitrogenic effect. Anthony Zeník

HPH 11/2
HAHN, P.; POUPA, O.

Effect of antihistamine substances on the activity of thyroxin.
Biol.listy Suppl.1:70-72 1950. (CIML 20:5)

1. Of the Department of General Physiology (Head--Prof.F.Karasek,
M.D.) of the Institute of Physiology (Head--Prof.V.Laufberger,
M.D.) of the Medical Faculty of Charles University, Prague.

HARM, M.; PAVLIK, F.

Determination of the aldolase level in serum as a diagnostic method in patients with suspected carcinoma of the prostate,
Cas. lek. cesk. 104 no.9:242-245 5 Mr'65.

1. Ustav klinické a experimentální chirurgie v řadě (ředitel: prof. dr. B. Špacák, DrSc.).

HAHN, M.; PAVLIK, F.

Determination of urinary 17-ketosteroid levels in the diagnosis
of prostate carcinoma. Cas. lek. cesk. 102 no.27/28:772-775
8 Jl '63.

1. Ustav klinicke a experimentalni chirurgie v Praze, reditel
prof. dr. B. Spacek, DrSc.
(PROSTATIC NEOPLASMS) (17-KETOSTEROIDS)
(URINE) (PROSTATIC HYPERTROPHY)
(ADRENAL CORTEX HORMONES)
(DIAGNOSIS, DIFFERENTIAL)

HAHN, M.; PAVLIK, F.

Determination of acid, alkaline and prostatic phosphatase
in the diagnosis of prost ... carcinoma. Cas. lek. cesk. 102
no. 25:686-692 21 Je '63.

1. Ustav klinické a experimentální chirurgie v Praze, ředitel
prof. dr. B. Spáček, DrSc.

(PROSTATIC NEOPLASMS)
(PROSTATIC HYPERTROPHY)
(ALKALINE PHOSPHATASE)
(ACID PHOSPHATASE)

CZECHOSLOVAKIA

HAHN, M., and PAVLIK, F., Institute for Clinical and Experimental Surgery (Ustav klinicke a experimentalni chirurgie), Prague, Prof. Dr B. SPACEK, Dr of Sciences, director.

"Estimation of Acid, Alkaline and Prostatic Phosphatase in the Diagnosis of Carcinoma of the Prostate"

Prague, Casopis Lekaru Ceskych, Vol CII, No 25, 21 June 63,
pp 686-692.

Abstract [Authors' English summary]: Described are the method, results and reliability of estimating acid , alkaline and prostatic phosphatases in patients suffering from carcinoma and prostate hypertrophy. The method was applied to 33 patients with histologically confirmed carcinoma, and in 37 patients with confirmed benign hyperplasia. Results revealed that none of the phosphatases was reliable for the diagnosis and is not justified even in cases of a suspect digital findings as a basis for surgical or conservative treatment. Acid phosphatase appears to be most reliable; its repeatedly low values rule out to a certain extent the presence of metastases. Graphs, tables. Thirty-one references, including 2 Czech and 1 Russian.

1/1

1/1

KOCVARA, S.; HAHN, M.; CERVINKA, F.; ZAK, F.; HATALA, M.

Bacteriological examination in chronic prostatitis. Rozhl.
chir. 42 no. 5:321-326 My '63,

1. Ustav klinicke a experimentalni chirurgie v Praze, reditel
prof. dr. B. Spacek, DrSc. II patologickoanatomicky ustav
fakulty vseobecneho lekarstvi KU v Praze, prednosta prof. dr.
V. Jedlicka.

(PROSTATITIS) (STAPH INFECTIONS)
(STREPTOCOCCAL INFECTIONS)
(STREPTOCOCCUS FAECALIS)

HAHN, M.

Current status of the diagnosis of prostatic cancer. (A review). Cas.
lek.cesk 101 no.2:16-20 5 Ja '62.

1. Ustav klinicki a experimentalni chirurgie, Praha-Krc, reditel prof.
MUDr. B. Spacek, clen korespondent CSAV.

(PROSTATE neopl)

HAHN, M.

Isotopes in the diagnosis of prostatic carcinoma. Rozhl. chir. 41
no.10:680-682 O '62.

1. Ustav klinicke a experimentalni chirurgie v Praze, reditel prof.
dr. B. Spacek, DrSc.
(PROSTATIC NEOPLASMS) (PROSTATIC HYPERSTROPHY)
(PHOSPHORUS ISOTOPES)

HAHN,Miloslav

A new needle for bioptic puncture of the prostate. Rozhl. chir. 41
no.7:488-490 Jl '62.

1. Ustav klinické a experimentalní chirurgie, Praha - Krč, ředitel
prof. dr. B. Spacek.

(PROSTATE pathol) (BIOPSY equip & supplies)

HANN, Miloslav; TRAVNICEK, Bostislav

Function of the bladder neck after adenomectomy in the roentgen cinematographic picture. Rozhl. chir. 41 no.7:453-457 JI '62.

I. Ustav Klinické a experimentální chirurgie, Praha-Krč, reditel
prof. dr. B. Špaček.
(PROSTATECTOMY) (BLADDER radiography)

HAHN, M.

Diagnosis of prostatic carcinoma. Rozhl.chir.40 no.2-3:93-99 Mr'61.

1. Ustav klinické a experimentální chirurgie, Praha-Krč, ředitel
prof. MUDr. Bohumil Spacek.
(PROSTATE neopl)

HAHN, M.

Diagnosis of prostatic carcinoma. Rozhl.chir.40 no.2-3:93-99 Mr'61.

1. Ustav klinicke a experimentalni chirurgie, Praha-Krc, reditel
prof. MUDr. Bohumil Spacek.
(PROSTATE neopl)

HUNGmann, V.; KOcVARA, S.; HAHN, M.

Use of small doses of neomycin in urology. Cas.lek.cesk. 99 no.9:
282-285 26 F '60.

1. Ustav klinicke a experimentalni chirurgie, Praha, reditel prof.
dr. B. Spacek.

(NEOMYCIN ther.)
(UROLOGY ther.)

HAHN, M. 1949

(Inst. of Pharmacol. & Experimental Therapy, U/Breslau)

"Experimental Study of Protection Against Liver Poisons."

Naunyn-Schmiedeberg's Arch. fur Exper. Pathologie und Pharmakologie, Berlin, 1949
206/5(6 (74-682)
Abst: Exc. Med. 11, Vol. III, No. 5, p. 686

Hahn, M.

The photometric determination of antipyrine with ρ -dimethylaminobenzaldehyde. M. Hahn, J. Kralj, and M. Perpar (Univ. Ljubljana, Yugoslavia). *Z. anal. Chem.* 181, 104-8 (1968). — By the reaction of ρ -dimethylaminobenzaldehyde and antipyrine a rapid detn. of antipyrine can be made, based on the dependence of the color intensity upon the time and temp., as detd. empirically. Although the max. color intensity is reached only after 4 or 5 hrs., the measurement can be made after an hr. The effect of daylight during this time is not appreciable. The test can be made with about 0.03 mg. of antipyrine per ml. Aspirin, phenacetin, antifebrin, and pyramidon do not interfere with the test so that it can be used in testing pharmaceutical contg. these substances. Deysson's test (*C.A.*, 43, 6830) follows Beer's law better but the reagent used in it is already strongly colored and the measurement takes place only after standing 24 hrs. in the dark. Moreover with small quantities of antipyrine there is less change in the extinction value.

W. T. Hall

Med 3

EXCERPTA MEDICA Sec 12 Vol 13/8 Ophthalmology Aug 59

1268. CASES OF CONGENITAL LENS SUBLUXATION - O przypadkach wrodzonego podwinięcia soczewek - Hahn J., Oddz. Oczn. Szpit. Miejsk. Nr. 6, Warszawa - KLIN. OCZNA 1957, 2773 (273-284)

The author discusses in detail congenital lens subluxation, the aetiology of the disease and its clinical complications, comparing observations of 3 cases which came to the hospital at yearly intervals, first with one, and then with the other eye affected, owing to the appearance of symptoms of secondary glaucoma. The author suggests that it might be of benefit in some patients, especially physical labourers, to remove the lens in the 2nd, still uninvolved eye, when one eye has already been operated on for total luxation of the lens and glaucoma symptoms.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000617800037-6

HAHN, Gyorgy

"Paleogeographic atlas of China" by Lju Hun Jun. Reviewed by
Gyorgy Hahn. Geod kart 15 no.4:307 '63.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000617800037-6

HAHN, Gyorgy

Physicogeographical observations in the vicinity of Istenmezeje.
Foldrajzi ert 13 no.3;291-314 '64.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000617800037-6

HAHN, Gyorgy

"Paleogeographical atlas" by H.G. Termier. Reviewed by
Gyorgy Hahn. Geol kart 15 no.2:153 '63.

HAHN, Geza, dr.

Comments on the lecture entitled, "Specialized medical service
to the rural population." Nepegeszsegugy 44 no.11:335-337
N '63.

(RURAL HEALTH)
(HOSPITAL OUTPATIENT SERVICE)
(SPECIALISM)

HAHN, Geza, dr.

Development of public health in the German Democratic Republic. Nepe-
geszsegugy 43 no. 3:68-72 Mr '62.

(PUBLIC HEALTH)

HAHN, Geza, dr.

Sanitary-epidemiological educational work. Nepgeszsegugy 42 no.4:
112-115 Ap '61.

(HEALTH EDUCATION)

HAHN, Geza, dr.

Statistical data on diseases of the circulatory system. Nepegeszsegugy
42 no.1:4-12 Ja '61.

(CARDIOVASCULAR DISEASES statist)

HAHN, Geza, dr., az orvostudomanyok kandidatusa (Budapest)

Racial unity of mankind. Term tud kozl 5 no.9:385-387 S '61.

HAHN, G.

Materialistic features of Hungarian medicine at the beginning
of the past century. Orv.hetil. 100 no.38:1378-1381 S '59.

(PHILOSOPHY, MEDICAL)

(HISTORY OF MEDICINE)

HAHN, Geza, dr.

Theoretical bases of health planning. Nepageszsegugy 40
no.10:257-261 0 '59.
(PUBLIC HEALTH)

HAHN, G.

In memory of Henry Ernest Sigerist, 1891-1957. Nepegeszsegugy 39 no.
5-6:153-154 May-June 58.

(OBITUARIES

Sigerist, Henry E. (Hun))

HAHN, G.

HAHN, Géza

Significance of the Great October Socialist Revolution for health
care. Nepegeszsegugy 38 no.10-11:245-247 Oct-Nov 57.

(PUBLIC HEALTH

in Russia, significance of the October Revolution (Hun))

HAHN, Geza

Role of Jozsef Fodor in the unveiling of the etiology of enteral infections. Nepegessegugy 38 no.8-9:206-210 Au-Sept 57.
(TYPHOID FEVER, prev. & control
contributions of Jozsef Fodor (Hun))

HAHN, Geza, dr.; KATONA, Ibolya, dr.

Pioneers of Hungarian school hygiene. Nepogeszsegugy 37 no.8:
197-199 Aug 56.

(SCHOOLS
hyg. & med. serv. in Hungary, hist. (Hun))

HAHN, Geza, dr.

Some theoretical and terminological problems of hygiene.
Napegeszsegugy 37 no.3:57-62 March 56.

1. Kozlemeny az Orszagos Kozegeszsegugyi Intezet (igazgato:
Tako, Jozsef dr.) levegongeszssegugyi osztalyarol.

(HYGIENE

terminol. & definitions of hygienic concepts (Hun))